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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/796,018 | 03/10/2004 | Tsuyoshi Yamada | 119051 | 2130 |
| 25944 | 7590 | 03/16/2006 | EXAMINER | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | | MENEFEE, JAMES A |
| | | ART UNIT | | PAPER NUMBER |
| | | | | 2828 |

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

BY

| | | |
|------------------------------|------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/796,018 | YAMADA ET AL. |
| | Examiner James A. Menefee | Art Unit 2828 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada (US 2002/0027932) in view of Oka et al. (US 5,289,479).

Regarding claim 1, Takada discloses in Fig. 2 a laser apparatus capable of emitting laser beams of a plurality of different wavelengths including a solid state laser medium 11 which emits light of a plurality of different peak wavelengths, a resonance optical system which resonates the emitted light of the plurality of peak wavelengths and converts respective light to oscillate the laser beams of the plurality of different wavelengths. There is not disclosed a quarter wave plate. Oka teaches that in a second harmonic generating system it is advantageous to include a quarter wave plate, and it would have been obvious to one skilled in the art to use this element because it causes the harmonic output to be output in a stable condition, as taught by Oka. Col. 2 lines 9-21.

Regarding claim 2, Takada includes a first resonance optical system (along L1,L2) which includes a first wavelength converting element 13a and resonates the emitted light of a first peak wavelength and converts light of the first peak wavelength to oscillate a first laser beam, and a second resonance optical system (along L1,L2,L3) which includes a second wavelength converting element 13b and uses a part of an optical path L1,L2 in common with the first resonance optical system and resonates the emitted light of a second peak wavelength and converts the light of the second peak wavelength to second harmonic light to oscillate a second laser beam. The quarter wave plate, deemed obvious above, would obviously be included in the common optical path, as one skilled in the art would recognize that such a placement would allow only one wave plate to be needed, rather than a separate plate corresponding to each wavelength converting element. Additionally, Oka teaches that the quarter wave plate should be placed in the fundamental beam path, col. 2 lines 16-18, thus the ideal position would be in the common optical path—the place where the fundamental beam is propagating most.

Regarding claims 3-4, Takada's mirrors 14e,14f are movable with respect to the common use optical path and selectively insertable in and removable from the common use optical path to select the particular resonance optical system.

Regarding claim 6, Takada's output mirror 15 is on the common use path and reflects at the first and second peak wavelengths and transmits at the first and second (converted) wavelengths. See par. [0025] last sentence.

Regarding claim 8, Takada's device is an ophthalmic laser treatment apparatus, see Fig. 1, and converts light of a peak wavelength in an infrared region to a laser beam in the visible region. See par. [0024].

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takada and Oka as applied to claim 1 above, and further in view of Kuizenga et al. (US 5,249,192). Takada and Oka teach the limitations of parent claim 1 as noted above, and Takada discloses an insertion and removal unit inserting and removing the reflection mirror in and from the common use path, but does not disclose that this is done by rotating the mirror without changing an angle of a reflection plane of the mirror with respect to the common use path.

Kuizenga teaches that in a laser system, a mirror can be implemented using a rotating reflector that may alternatively be rotated so that the reflector reflects the incident beam or lets it pass. See Figs. 1-3, 6, 14. Since the reflector is a rotating wheel as shown in Figs. 6,14 it will rotate the individual mirror without changing an angle of reflection plane. It would have been obvious to one skilled in the art to utilize such a mirror in place of the mirrors of Takada because it avoids the alignment and mechanical complexity of translating mirrors found in the prior art (such as those in Takada). See col. 2 line 64-col. 3 line 5.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takada and Oka as applied to claim 1 above, and further in view of Hale et al. (Applied Optics, 12/15/1988). Takada and Oka teach the limitations of parent claim 1 as noted above, but do not teach that the quarter wave plate is constructed of a combination of quartz and magnesium fluoride. Hale teaches such a quarter wave plate. See Part IV (p. 5150-5151). It would have been obvious to one skilled in the art to use such a wave plate because it will be temperature compensated, as taught by Hale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oka et al. (Optics Letters, Oct. 1988) and Liu (US 4,637,026) also disclose placing quarter wave plates inside a frequency doubling system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (571) 272-1944. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James Menefee
March 8, 2006